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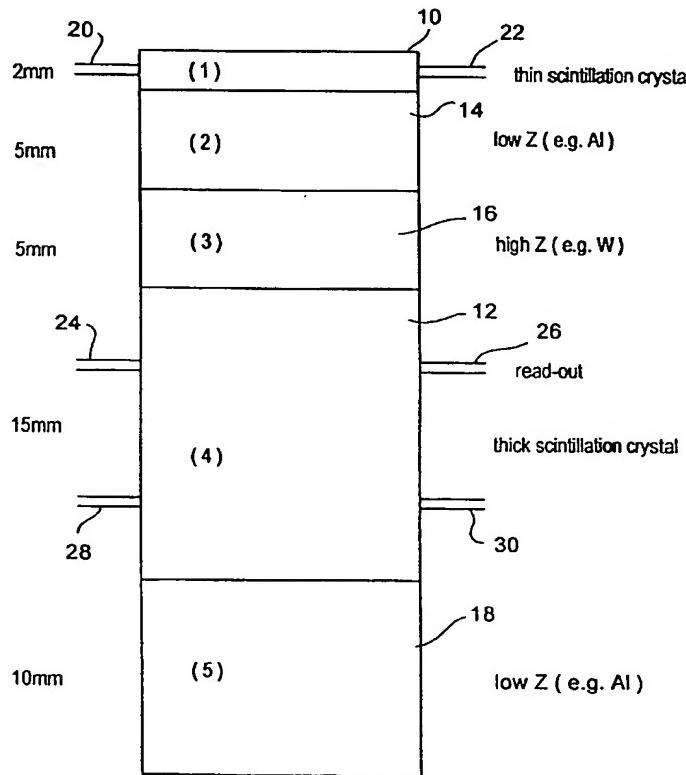
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(54) Title: X-RAY INSPECTION SYSTEM AND METHOD



(57) Abstract: An X-ray inspection system in which a thin X-ray absorber is placed upstream of an object under investigation so as to remove low energy X-rays, typically below 0.5MeV. The absorber may be a sheet of lead 10mm thick. Where the X-ray inspection system which incorporates a detector which relies on the electro-magnetic cascade effect produced in suitable materials when bombarded with X-rays so that energy is transferred into the material at different depths depending on the energy of incident X-rays, and the first component on which the X-rays impinge comprises a relatively thin crystal this unwanted background may be reduced by placing a vessel containing a fluid whose density is less than that of air, in front of the detector crystal array. Typically the fluid is helium at atmospheric or slightly greater than atmospheric pressure. The background can be reduced by applying a magnetic field in the region in front of the detector crystal array so as to sweep away electrons from that region.

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